

**ecology and environment, inc.**

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International Specialists in the Environment

April 8, 1987

Mr. Jeff Larson  
Division of Land Pollution Control  
Illinois EPA  
2200 Churchill Road  
Springfield, Illinois 62706

Dear Jeff:

As discussed in previous telephone conversations, Ecology & Environment, Inc. believes that it would be beneficial to perform hydraulic conductivity tests at newly installed monitoring wells for the Dead Creek/Sauget sites RI. E & E is pleased to present the following scope of work and cost estimate for the hydraulic conductivity testing.

Scope of Work

E & E will perform hydraulic conductivity tests of aquifer materials using the rising head slug test method. The slug tests will be accomplished by inserting a water tight cylinder into a well, which will displace a known volume of water, thereby raising the water level in the well. After the water level in the well stabilizes at the original static level, the cylinder will be swiftly removed. The removal of the cylinder causes the water level to be depressed by a known volume below the static level. Water levels are then recorded at specific time intervals until the water level recovers to original static level.

Water level data will be collected using a Model EL-200 Groundwater Monitoring System with a pressure transducer sensor, manufactured by Enviro-Labs, Inc. The slug will consist of a 5 foot long, 1 1/4-inch outside diameter length of PVC pipe filled with sand.

Slug tests will be performed at two monitoring wells on each of the five sites at which wells were installed. These sites include Site G, Site H, Site I, Site O, and Site Q. The data collected will be used to calculate a hydraulic conductivity for aquifer materials in the vicinity of the respective well screens using the Hvorslev method for unconfined aquifers. The results from the tests will enable E & E to evaluate the potential for contaminant migration and the expected distribution of contaminants through groundwater transport.

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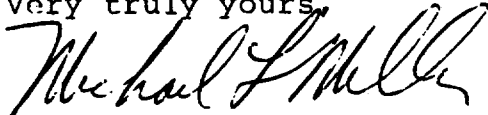
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Project Cost Estimate

The estimated cost to provide the services as presented in the scope of work summary is \$ 7,592.79. A detailed cost breakdown by task and cost element is shown on the attached sheet. These costs were projected in accordance with the rates in an amended Dead Creek contract.

Following your review, please contact me with any questions you may have or any intentions the agency has regarding this proposal.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Michael L. Miller".

Michael L. Miller, P.E.  
Project Manager

Encl.  
730:1W

IEPA: Dead Creek  
Estimated Direct Labor Hours & Costs  
Performance of Hydraulic Conductivity Tests on Monitoring Wells

Labor Rate Per Hour		Totals	Task 1
-----		-----	-----
\$28.06 Principal		0	0
\$19.40 Chief		0	0
\$14.33 Senior		60	60
\$11.71 Associate		60	60
\$9.14 Junior		0	0
\$7.28 Technician		0	0
\$6.96 Ass't Technician		0	0
\$7.14 Secretary		0	0
		-----	-----
TOTAL HOURS		120	120
		=====	=====
1) Total Labor Dollars		\$1,562.40	\$1,562.40
2) Fringe Benefits	25.0%	390.60	390.60
		-----	-----
3) Total Labor Cost		\$1,953.00	1,953.00
Overhead Rate -----)			65.0%
4) Overhead		\$1,269.45	1,269.45
5) Travel- Airfare		320.00	320.00
- Per Diem		200.00	200.00
- Lodging		400.00	400.00
- Auto Rental		240.00	240.00
		-----	-----
Subtotal Travel		\$1,160.00	1,160.00
		-----	-----
6) Subcontracts		\$0.00	0.00
		-----	-----
7) Other Direct Costs:			
Personal Protection Disposables		0.00	0.00
Communication		50.00	50.00
Rental of EL 200 Grwtr. Mon. System		600.00	600.00
Miscellaneous Supplies		300.00	300.00
		-----	-----
Subtotal ODCs		\$950.00	950.00
		-----	-----
8) Subtotal		\$5,332.45	5,332.45
9) SG&A (excluding subcontracts)	28.0%	\$1,493.09	1,493.09
		-----	-----
10) TOTAL COST		\$6,825.54	6,825.54
11) FEE (on non-labor)	5.0%	\$135.04	135.04
12) FEE (on other costs)	13.0%	\$536.22	536.22
13) Laboratory Analysis (E&E)		\$0.00	0.00
13) Equipment Usage (E&E)		\$0.00	0.00
14) Computer Usage (E&E)		\$96.00	96.00
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15) TOTAL PRICE		\$7,592.79	7,592.79
		=====	=====